

IN THE CLAIMS

Claims 1-7 canceled

8. (Currently Amended) A method for etching a silicon wafer using XeF_2 not disassociated by plasma generating means, comprising steps of:

(a) etching a silicon wafer using an etching apparatus comprising a loading chamber for loading XeF_2 , an expansion chamber for collecting sublimated XeF_2 from the said loading chamber, and an etching chamber for etching using XeF_2 not disassociated by plasma generating means supplied from the said expansion chamber;

(b) eliminating air moisture in each chamber to prevent formation of HF by injecting nitrogen to the loading chamber, the expansion chamber ~~or the~~ and the etching chamber, and exhausting the injected nitrogen therefrom prior to the said step (a); and

(c) controlling the internal pressure of the loading chamber at a level between sublimation pressure of XeF_2 and atmospheric pressure to prevent sublimation of the residual XeF_2 in the loading chamber after the said step (a).

9. (Original) The method for etching a silicon wafer using XeF_2 as claimed in claim 8, wherein the XeF_2 gas is injected on the surface of the wafer with a viscous laminar downflow using an injector having a predefined shape provided in the etching chamber for uniform etching of the wafer in step (a).

10. Canceled

11. (Original) The method for etching a silicon wafer using XeF_2 as claimed in claim 8, including weighing the residual XeF_2 gas in the loading chamber at any time during the step (a) to estimate the remaining time for performing the etching step with the residual XeF_2 .

12. (Currently Amended) A method for etching a silicon wafer using XeF_2 not disassociated by plasma generating means, which method comprises:

(a) eliminating air moisture in a loading chamber, an expansion chamber, and an etching chamber to prevent formation of HF by injecting nitrogen to the loading chamber, the expansion chamber ~~or the~~ and the etching chamber and exhausting the injected nitrogen therefrom;

(b) thereafter loading XeF_2 not disassociated by plasma generating means in said loading chamber;

(c) collecting sublimated XeF_2 from said loading chamber in said expansion chamber;

(d) etching said silicon wafer in an etching chamber using XeF_2 supplied from said expansion chamber; and

(e) controlling internal pressure of the loading chamber at a level between sublimation pressure of XeF_2 and atmospheric pressure to prevent sublimation of residual XeF_2 in the loading chamber.

13. (Original) A method for etching as set forth in claim 12 including injecting said XeF_2 gas on a surface of said silicon wafer with a viscous laminar downflow.